

A Description of the Larva of *Celina angustata* Aubé (Coleoptera: Dytiscidae)

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ABSTRACT

The larva of *Celina angustata* Aubé is described and illustrated. Couplets are provided to separate the larva of *Celina* from larvae of other North American dytiscid genera.

The genus *Celina* is one of about a dozen genera of North American dytiscid beetles whose larvae have not been described. Therefore, I have prepared the following description of the larva of *Celina* so it may be interpolated into existing keys and may be identified by other workers.

Genus *Celina* Aubé

Celina Aubé, 1836:219.

Celina is primarily a neotropical genus with 28 species described from that area. Four additional species are reported from the United States. Three of these species are known to occur in subtropical Florida and along the Gulf Coast. The fourth North American species, *Celina angustata* Aubé, is known to occur throughout the eastern half of the United States from Florida to New York and westward at least to Kansas.

Adults and larvae of *Celina* occur in lentic habitats. Specimens are most often found in the leafy substrate in shallow weedy margins of ponds and small lakes. Occasionally, I have collected adults and larvae of *Celina* from stands of *Typha* in shallow mucky sloughs and ditches.

Celina angustata Aubé

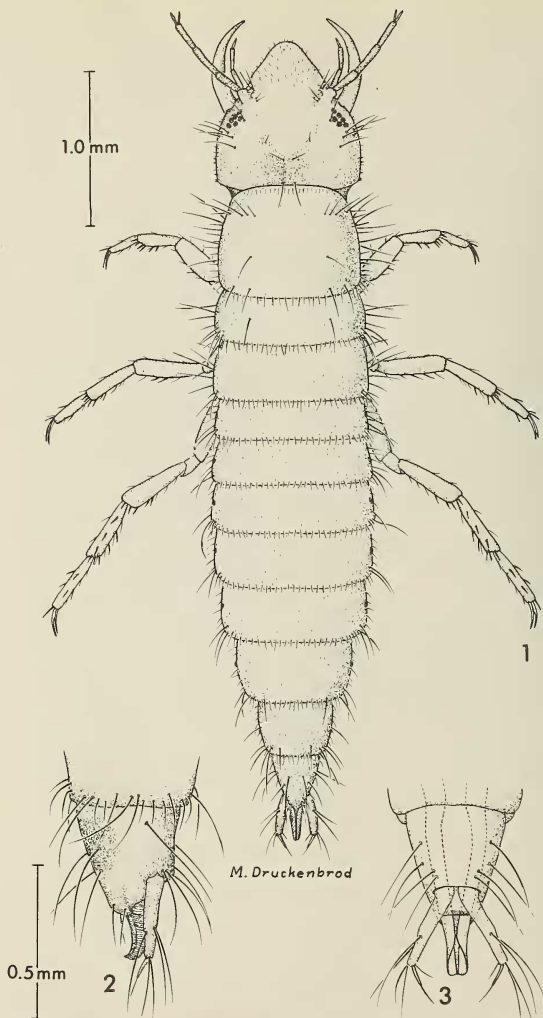
Celina angustata Aubé, 1838:447.

During the past 8 years I collected larvae which by association with adults and

elimination of known genera of dytiscid larvae presumably were larvae of *Celina*. Unfortunately, these larvae were collected from the Neotropics where more than one species of *Celina* may have been present in each collection site and the species could not be ascertained by association. Because *Celina angustata* is the only species of *Celina* known to occur in Maryland and adjacent states, I attempted to find their presumed larvae for rearing. On 26 July 1970, in a small pond at Rosehaven, Anne Arundel County, Maryland, I collected three of the presumed *Celina* larvae along with adults of *Celina angustata*. I tried to rear the larvae but they died and were preserved. Therefore, although the larvae were not reared, I am describing them by association. I am confident that the specimen described below is the larva of *Celina angustata*.

Third-instar Larva.—Length, 5.0 mm; width of pronotum at base, 0.9 mm. Body depressed, elongate, almost parallel sided but 3d and 4th abdominal segments slightly wider than other abdominal segments. Color of integument creamy white; dorsum testaceous, head with slightly darker discal areas at base behind frontal arms of ecdysial cleavage line.

Head bluntly, broadly sagittate; broadest at level opposite bifurcation of ecdysial cleavage line. Nasale of head blunt and broad. Ecdysial cleavage line distinct at base of head, forked about midway between ocular area and base of head; frontal arms of ecdysial cleavage line diverge and extend to basolateral margin of nasale immediately in front of insertion of antennae. Ocular areas each with 6 ocelli arranged in an ellipse (Fig. 1).



Figs. 1-3. *Celina angustota* Aubé, third-instar larva: 1, habitus; 2 and 3, last abdominal segment and recurved apical process (2, lateral view; 3, ventral view).

Antenna (Fig. 4) tetramerous, cylindrical; basal segment short, about 1/3 as long as second segment; 2d, 3d, and 4th segments subequal; last segment with 2 small, acicular articles on apex. Ventral surface of nasale (Fig. 5) with a primary row of stout setae extending from apex posteriorly along lateral margins to articulation of antennal bases and a secondary row of setae in apical region a short distance behind primary row; numerous small setae behind secondary row; a pair of long setae laterally at mid-length and a longer pair laterally near base; a cluster of long, anteriorly slanted setae behind both ends of secondary row of setae; a pair of short, anteriorly slanted setae between the 2 clusters of setae.

Mandible (Fig. 6) long, slender, falciform. Maxillary palpus (Fig. 7) 4-segmented; basal and ultimate segments short, subequal. Labium (Fig. 8) without ligula; labial palpus 2-segmented, basal segment slightly longer than ultimate segment.

Pronotum with sides arcuate; slightly wider basally; lateral and posterior margins with numerous long setae (Fig. 1). Mesonotum wider than pronotum but slightly less than half as long as pronotum; with long setae along lateral and posterior margins. Metanotum subequal in width and slightly longer than mesonotum, setation similar to mesonotum.

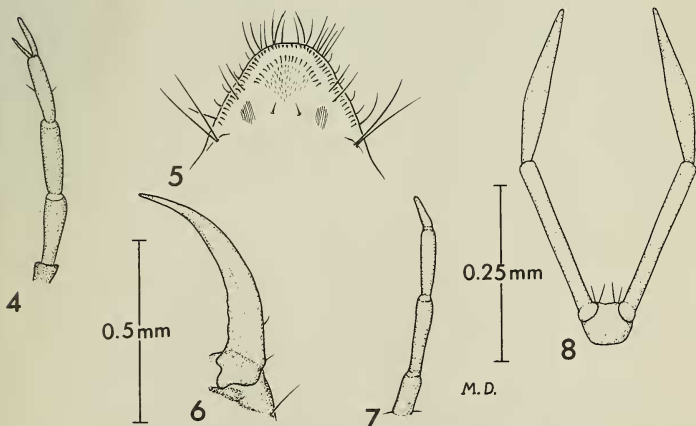
Legs 5-segmented; coxa long, robust; trochanter about 1/4 as long as coxa; femur longer than tibia; tarsus with 2 elongate, slender claws. No natatory hairs present on legs.

Abdomen of 8 segments; segments 1 through 5 with setation similar to metanotum; segments 5

through 8 also similar to preceding segments but each bearing an additional pair of very long setae at basolateral angles; segments 1 through 7 each with 2 spiracles, 1 on each side of segment; segment 8 with the lateral tracheal trunks opening above cerci; tracheal trunks terminate in a spiniform, recurved apical process (Figs. 2, 3) with a medial, sclerotized acicular strut; segments 7 and 8 completely sclerotized, cylindrical; segment 8 with a pair of 2-segmented cerci ventrally. Basal segment of cercus with 3 setae at midlength (1 dorsal, 1 ventral, and 1 lateral) and 3 setae on apex (2 lateral, 1 medial); apical segment of cercus slender, elongate, with a single short seta on apex.

The unusually recurved extension of the lateral tracheal trunks suggests that the *Celina* larva may be able to puncture aerenchymatous plant tissues and thus replenish its air supply underwater.

In a key to the dytiscid larvae of the United States by Chandler (1956: 312-314), *Celina* does not fit all of the characters given in either alternative in the first couplet. The following couplets substituted for couplets 1 to 5 in Chandler's key will separate *Celina* larvae from larvae of the other described genera in the Hydroporinae:



Figs. 4-8. *Celina angustata* Aubé, third-instar larva: 4, left antenna, vv; 5, nasale, vv; 6, left mandible, vv; 7, left maxillary palpus, vv; 8, labium, vv. (vv = ventral view.)

1. Head with a frontal projection (Fig. 1); body lacking lateral fringes of swimming hairs 2
 Head without a frontal projection; body with or without lateral fringes of swimming hairs (to couplet 6 in Chandler's key)
2. Head broadly sagittate; frontal projection without a notch at each side; maxillary palpus 4 segmented; last abdominal segment with an unusual recurved extension of the lateral tracheal trunks beyond the apex of the segment (Figs. 2, 3)..... *Celina* Aubé
 Head pyriform, not broadly sagittate; frontal projection with or without a notch at each side; maxillary palpus 3 segmented; lateral tracheal trunks not extending beyond apex of last abdominal segment, terminating on apex 3
3. Frontal projection with a notch at each side 4
 Frontal projection without a notch at each side 5
4. Cerci with only primary hairs, 6 or 7 in number
 *Hydroporus* Clairville and *Hygrotus* Stephens
 Cerci with additional secondary hairs
 *Oreodytes* Seidlitz and *Deronectes* Sharp
5. Larva not greatly widened in middle; last abdominal segment long and tapering; cerci with only primary hairs Tribe Bidessini
 Larva greatly widened in middle; last abdominal segment long or short; cerci long with secondary hairs, or short with primary hairs only 6
6. Last abdominal segment long and tapering; cerci short, arising beneath segment and projecting beyond it, having primary hairs only *Hydrovatus* Motschulsky
 Last abdominal segment short; cerci long, with secondary hairs . *Oreodytes* Seidlitz

The New World genus *Celina*, along with the Old World genus *Methles*, is placed in the subfamily Methlinae based on similarities in adult morphology. Several years ago, Mr. Jack Balfour-Browne showed me a larva he had associated with the African genus *Methles*, and that larva is strikingly similar in habitus to the larva of *Celina*. The larva of *Methles* sp. was described briefly by Bertrand (1963) as "Hydroporinae genus 2?" and was recognized later by Bertrand (1972) as the larva of *Methles* sp. Bertrand's brief description and few illustrations do not allow a thorough comparison of morphological characters of the larvae of the 2 genera. Therefore, I cannot provide a

means of separating the larvae of *Methles* and *Celina* at this time.

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